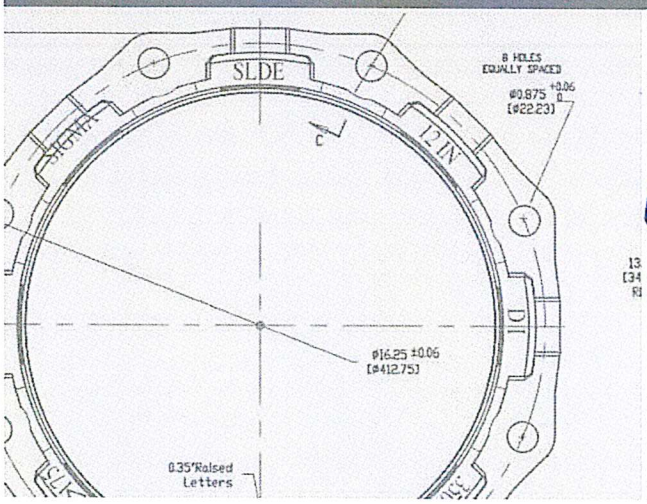
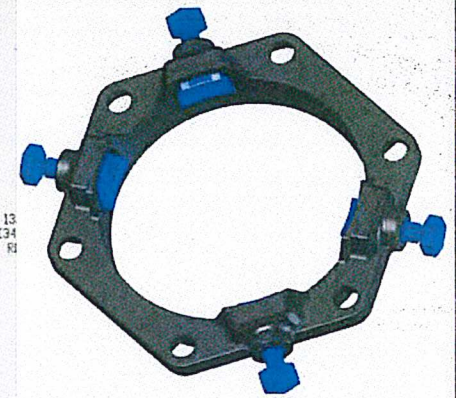
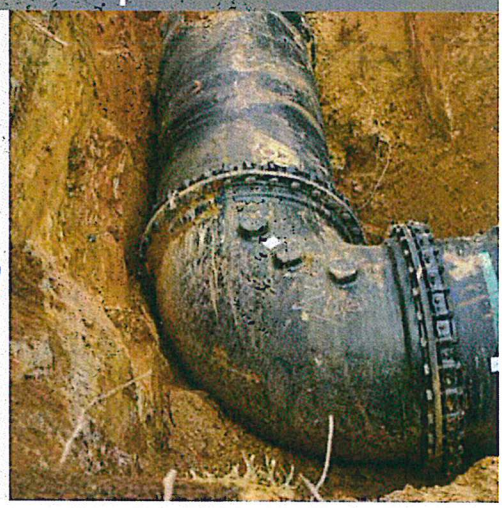
SIGMA™

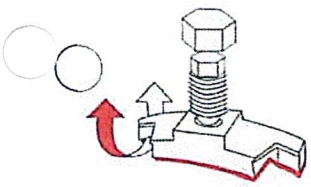
Quality – Service – Commitment – Delivered.

ONE-LOK™ Series SLDE for Ductile Iron Pipe

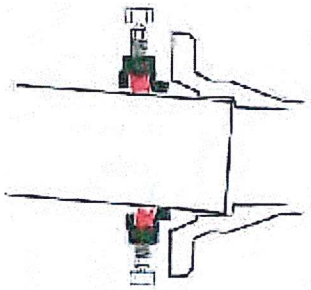








ONE-LOK's unique cam action allows the restraining wedges to "rock," gripping the pipe wall more securely as thrust force increases.



ONE-LOK's cam action also accommodates deflection of the joint during installation, and also allows for subsidence, seismic or other forces after installation, up to the maximum allowed deflection.

Deflection Chart

Nominal Size	Item #	Deflection
3-12"	SLDE3-SLDE12	5 deg
14-16"	SLDE14-SLDE16	2 deg
18-24"	SLDE18-SLDE24	1.5 deg
30-48"	SLDE30-SLDE48	1 deg

The SIGMA ONE-LOK Series SLDE is a mechanical joint restraining gland that implements a series of individually activated wedges into the mechanical joint follower gland. When the wedge segment is engaged by the actuating bolt, the primary contact edges of each wedge segment lock onto the pipe wall. This action causes the primary contact edges to grip the pipe and effectively restrain all classifications of ductile iron pipe.

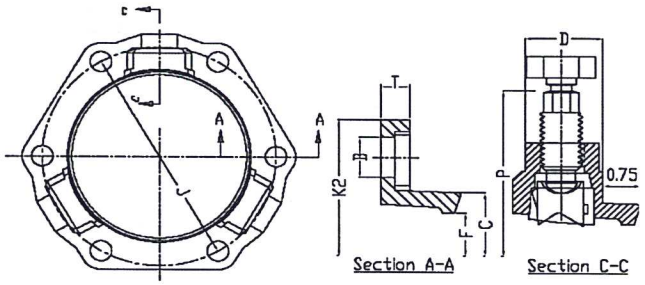
ONE-LOK SLDE's precision contoured wedges provide proper contact and support of the ductile iron pipe wall. Each wedge is manufactured with an elongated contour that evenly matches the outside circumference of each nominal diameter of ductile iron pipe. This elongated contour also eliminates the concern of damage to both the pipe wall and the interior cement mortar lining caused by point loading, even on the thinner pressure classes of ductile iron pipe.

ONE-LOK SLDE's wedge actuating bolt provides the installer with a visual torque indicator. The breakaway top ensures proper engagement of the wedge segment at the time of installation. Unlike other actuating bolts, the ONE-LOK SLDE is manufactured with a proprietary quality control system that ensures the breakaway tops will activate at the correct torque. The breakaway top is sized to match the same dimensions of the bolts and nuts used to assemble the mechanical joint fitting and follower gland, eliminating the need for special installation tools. Once engaged, the actuating bolt leaves a residual hex-head shank, allowing post-installation disassembly of the restrained joint, if necessary.

SIGMA Corporation
700 Goldman Drive
Cream Ridge, NJ 08514
800 999 2550 p
609 758 1163 f
crm-sales@sigmaco.com
www.sigmaco.com

ONE-LOK™ Series SLDE for Ductile Iron Pipe

ONE-LOK SLDE's unique wedge segment and actuating bolt design allows the two components to interface using a cam action principle, allowing the wedge segments to rock and increase their grip on the pipe wall as thrust on the assembled joint increases. This also allows improved resistance to subsidence, seismic forces, and other movement within the maximum deflection limitations of the mechanical joint under applicable AWWA standards.



Dimensions in Inches, Weights in Pounds

** Product is provided with SIGMASEAL™ improved mechanical joint gasket.*

Size	Item #	Weight (lbs)	Pipe OD	Dimensions								Bolts and Inserts			Rating
				C	F	D	T	P*	B	J	K2	No.	Size	Torque	
3	D-SLDE3	5.5	3.96	4.84	4.16	1.58	0.55	9.40	0.750	6.19	7.69	2	7/8	80-90	350
4	D-SLDE4	6.5	4.80	5.92	5.00	1.58	0.55	10.24	0.875	7.50	9.12	2	7/8	80-90	350
6	D-SLDE6	10.0	6.90	8.02	7.10	1.58	0.60	12.34	0.875	9.50	11.12	3	7/8	80-90	350
8	D-SLDE8	14.5	9.05	10.17	9.25	1.63	0.75	14.32	0.875	11.75	13.37	4	7/8	80-90	350
10	D-SLDE10	23.0	11.10	12.22	11.30	1.58	0.85	16.54	0.875	14.00	15.62	6	7/8	80-90	350
12	D-SLDE12	29.0	13.20	14.32	13.40	1.58	0.85	18.80	0.875	16.25	17.88	8	7/8	80-90	350
14	D-SLDE14	39.60	15.30	16.40	15.55	1.58	1.125	21.20	0.875	18.75	20.25	10	7/8	80-90	350
16	D-SLDE16	49.67	17.40	18.50	17.54	1.77	1.21	23.74	0.875	21.00	22.50	12	7/8	80-90	350
18	D-SLDE18	60.33	19.50	20.60	19.64	1.77	1.25	25.84	0.875	23.25	24.75	12	7/8	80-90	250
20	D-SLDE20	69.00	21.60	22.70	21.74	1.87	1.25	27.94	0.875	25.50	27.00	14	7/8	80-90	250
24	D-SLDE24	103.67	25.80	26.88	25.95	1.92	1.47	32.14	0.875	30.00	31.50	16	7/8	80-90	250
30	D-SLDE30	158.67	32.00	33.29	32.17	2.13	1.65	39.30	1.125	36.88	39.12	20	1	115-125	250
36	D-SLDE36	234.50	38.30	39.59	38.47	3.15	1.75	46.07	1.125	43.75	46.00	24	1	115-125	250
42	D-SLDE42	344.0	44.50	45.79	44.67	3.56	2.25	53.25	1.38	50.62	53.38	28	1 1/4	115-125	250
48	D-SLDE48	456.0	50.80	52.09	50.97	3.81	2.25	59.55	1.38	57.5	60.26	32	1 1/4	115-125	250

ONE-LOK SLDE was previously referred to as model SLD

P* Dim shows OD after head is broken/removed.
Sizes 3"-12" is approved for thinnest class of DI pipe.

Sizes 3" - 16" are pressure rated and UL listed for 350 psi on DI pipe and 250 psi sizes 18" - 36".
Sizes 42" and 48" are pressure rated at 250 psi.
Sizes 4" - 12" are FM approved for 175 psi on DI pipe.

Sample Specification:

Restraint for standard mechanical joint fittings shall be incorporated in the design of the follower gland and shall utilize multiple wedge segments that act against the pipe, increasing their resistance as the line pressure increases. The assembled joint shall maintain the maximum flexibility and deflection of all nominal pipe sizes after burial. Restraining gland, wedge segments, and actuating bolts shall be manufactured of high strength ductile iron conforming to the requirements of ASTM A536, Grade 65-45-12. Wedge segments shall be heat treated to a hardness of 370 BHN minimum. Dimensions shall be compatible with standardized mechanical joints conforming to the requirements AWWA C111/ANSI A21.11 and AWWA C153/ANSI 21.53 through 24" (latest revision). Breakaway tops shall be incorporated in the design of the actuating bolts to visually ensure proper torque. The manufacturing of the actuating bolt must incorporate a quality control procedure that is deemed acceptable by the specifier and positively assures precise and consistent operating torque of the breakaway top. The mechanical joint restraining devices shall have a working pressure rating of 350psi (for sizes 3-16") and 250 psi (for sizes 18-48") minimum and provide no less than a safety factor of 2:1. Restraint shall be UL Listed and FM approved in applicable sizes. Restraining device shall be SIGMA ONE-LOK™ or approved equal.

Installation Instructions:

Note: This product is designed for use on ductile iron pipe. Contact SIGMA for use on plain end fittings.

1. Clean fitting socket and pipe end. Lubricate gasket and pipe end with soapy water (or approved pipe lubricant meeting AWWA C111). Install ONE-LOK™ restrainer on the pipe with the lip extension facing the pipe end, followed by the gasket, tapered side toward end of pipe.

NOTE: SIGMASEAL Gasket is recommended for ONE-LOK 30-48". When installing SIGMASEAL gasket, the tapered edges of the gasket must face away from the pipe wall.

2. Insert pipe into fitting outlet and seat the gasket firmly and evenly into the gasket cavity. Maintain a straight joint during assembly.

3. Push the ONE-LOK gland toward the fitting and center it around the pipe with the lip evenly against the gasket. Insert the T-bolts and hand tighten the nuts. If deflection is required, make up after joint assembly but before tightening T-bolts.

4. Tighten T-bolts in an alternating manner maintaining an even gap between the gland and the fitting face at all points around the socket. Repeat until all the T-bolts are within the recommended torque value of AWWA C111/C600.

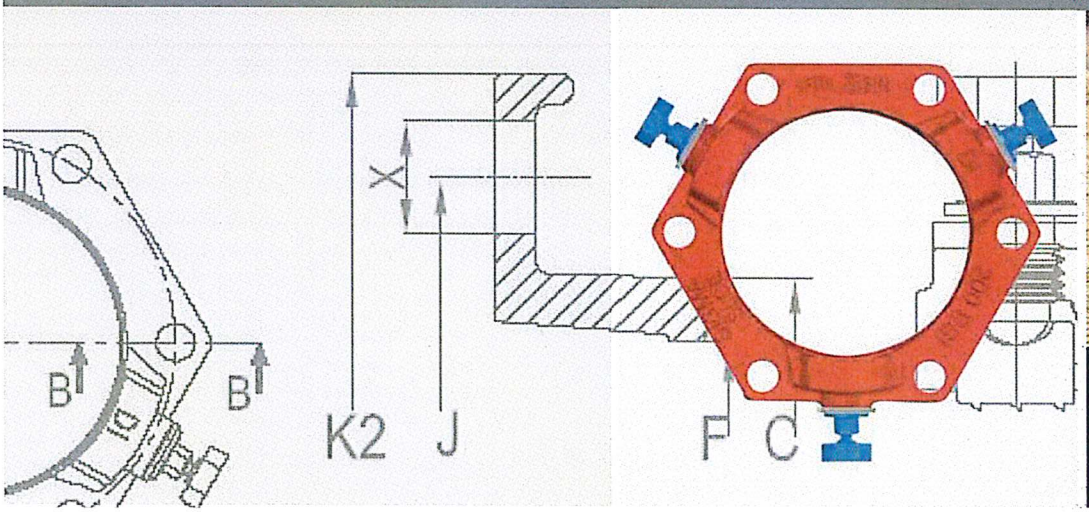
5. Following proper assembly of the mechanical joint, hand tighten actuating bolts until all wedges make complete contact with the pipe.

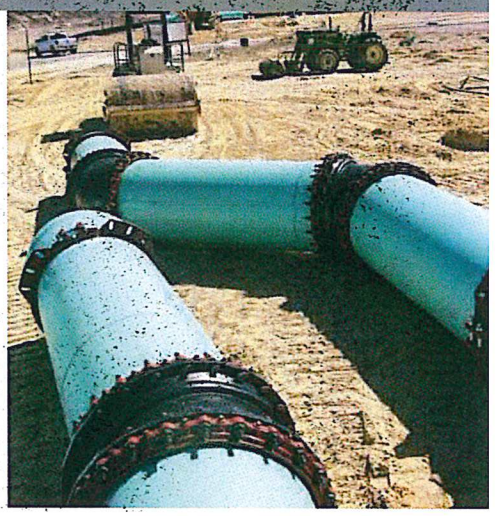
6. Tighten each actuating bolt in a clockwise direction, alternating between the bolts in a star pattern, until all the break-off tops have been removed. Never tighten a wedge bolt more than 180 degrees before moving to the next bolt.

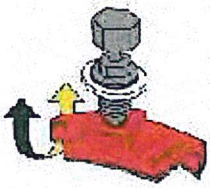
SIGMA

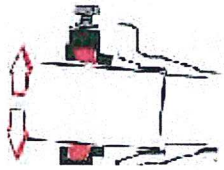
Quality – Service – Commitment – Delivered.

ONE-LOK™ Series SLCE for PVC Pipe









ONE-LOK's unique **CAM ACTION** allows the restraining lugs to "rock" and grip the PVC pipe wall more securely as thrust force increases, and allows for subsidence, seismic or other forces after installation, up to the maximum allowed deflection.

The SIGMA ONE-LOK Series SLCE is a mechanical joint restraining gland that implements a series of individually activated wedges into the mechanical joint follower gland. When the wedge segment is engaged by the actuating bolt, the primary contact edges of each wedge segment lock onto the pipe wall. This action causes the primary contact edges to grip the pipe and effectively restrain all classifications of both AWWA C900/C905 and ASTM D2241 IPS size PVC pipe.

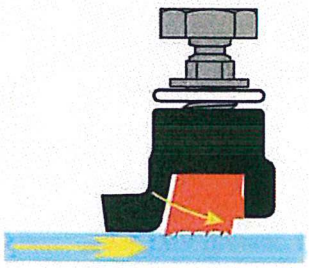
ONE-LOK SLCE's precision contoured wedges provide proper contact and support of the PVC pipe wall. Each wedge is manufactured with an elongated contour that evenly matches the outside circumference of each nominal diameter of PVC pipe.

ONE-LOK SLCE's wedge actuating bolt provides the installer with two visual torque indicators. The breakaway top and secondary shoulder stop ensure proper engagement of the wedge segment at the time of installation. Unlike other actuating bolts, the ONE-LOK SLCE is manufactured with a proprietary quality control system that ensures the breakaway tops will activate at the correct torque. The breakaway top is sized to match the same dimensions of the bolts and nuts used to assemble the mechanical joint fitting and follower gland, eliminating the need for special installation tools. Once engaged, the actuating bolt leaves a residual hex-head shank, allowing post-installation disassembly of the restrained joint, if necessary.

ONE-LOK SLCE also features a non-corrosive, two-piece ABS plastic spacer that is removed when using the product to restrain IPS sized pipes meeting ASTM D2241. The two-piece design of this spacer allows it to be removed without requiring disassembly of the product. When the ONE-LOK SLCE is used to restrain pipes meeting AWWA C900, the spacer is left intact on the actuating bolt.

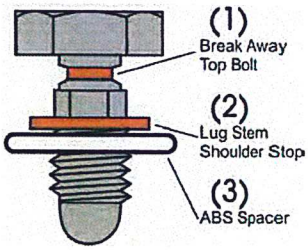
SIGMA Corporation
700 Goldman Drive
Cream Ridge, NJ 08514
800 999 2550 p
609 758 1163 f
crm-sales@sigmaco.com
www.sigmaco.com

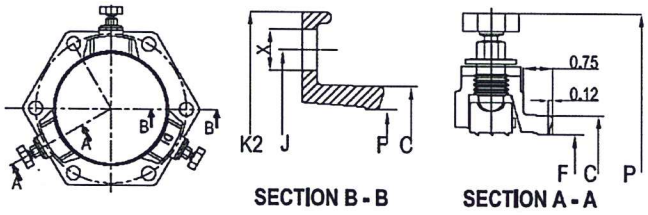
ONE-LOK™ Series SLCE for PVC Pipe



ONE-LOK SLCE's unique wedge segment and actuating bolt design allows the two components to interface using a cam action principle, allowing the wedge segments to rock and increase their grip on the pipe wall as thrust on the assembled joint increases. This also allows improved resistance to subsidence, seismic forces, and other movement within the maximum deflection limitations of the mechanical joint under applicable AWWA standards.

SIGMA ONE-LOK SLCE's can be used on all pressure classes and thicknesses of PVC pipe.





Dimensions in Inches, Weights in Pounds

Size	Item #	Weight (lbs)	PVC Pipe DI OD	IPS Pipe OD	Dimensions								Bolts and Inserts		
					C	F	K2	T	P	P*	X	J	No	Size	Torque
3	SLCE3	6.21		3.50	4.76	3.60	7.18	0.60	9.42	8.50	0.750	6.14	2	7/8	45-55
4	SLCE4	6.78	4.80	4.50	5.92	4.90	7.92	0.60	10.22	9.30	0.875	7.50	2	7/8	50-60
6	SLCE6	10.28	6.90	6.63	8.01	7.00	10.00	0.60	12.87	11.95	0.875	9.50	3	7/8	50-60
8	SLCE8	14.48	9.05	8.63	10.17	9.15	12.18	0.75	14.37	13.45	0.875	11.75	4	7/8	50-60
10	SLCE10	21.40	11.10	10.75	12.22	11.20	14.60	0.85	16.68	15.76	0.875	14.00	6	7/8	50-60
12	SLCE12	26.96	13.20	12.75	14.32	13.30	16.64	0.85	18.58	17.66	0.875	16.25	8	7/8	50-60
14	SLCE14	33.67	15.30		16.40	15.44	20.25	1.20	21.68	19.98	0.875	18.75	10	7/8	55-65
16	SLCE16	41.67	17.40		18.50	17.54	22.45	1.21	23.65	21.95	0.875	21.00	12	7/8	55-65
18	SLCE18	49.50	19.50		20.60	19.64	24.75	1.25	25.79	24.09	0.875	23.25	12	7/8	55-65
20	SLCE20	61.17	21.60		22.70	21.74	27.00	1.34	28.16	26.46	0.875	25.50	14	7/8	55-65
24	SLCE24	79.33	25.80		26.90	25.94	31.50	1.46	32.70	31.00	0.875	30.00	16	7/8	55-65
30	SLCE30	198.00	32.00		33.29	32.17	38.42	2.00	41.92	39.92	1.125	36.88	20	1.00	65-75
36	SLCE36	248.00	38.30		39.59	38.47	46.00	2.00	48.78	46.78	1.125	43.75	24	1.00	65-75

ONE-LOK SLCE was previously referred to as model SLC

P* Dim shows OD after head is broken/removed.

FM APPROVED

Sizes 4" - 12" are FM approved for 150 psi on AWWA C900 pipe and have been tested in accordance with ASTM F1674.
3-12" pressure rated at 200psi working pressure
14-24" pressure rated at 235psi working pressure
30-36" pressure rated at 165psi working pressure

Sample Specification: Restraint for standard mechanical joint fittings shall be incorporated in the design of the follower gland and shall utilize multiple wedge segments that act against the pipe, increasing their resistance as the line pressure increases. The assembled joint shall maintain the maximum flexibility and deflection of all nominal pipe sizes after burial. Restraining gland, wedge segments, and actuating bolts shall be manufactured of high strength ductile iron conforming to the requirements of ASTM A536, Grade 65-45-12. Dimensions shall be compatible with standardized mechanical joints conforming to the requirements AWWA C111/ANSI A21.11 and AWWA C153/ANSI 21.53 through 24" (latest revision). Breakaway tops shall be incorporated in the design of the actuating bolts to visually ensure proper torque. The manufacturing of the actuating bolt must incorporate a quality control procedure that is deemed acceptable by the specifier and positively assures precise and consistent operating torque of the breakaway top. The mechanical joint restraining devices shall have a working pressure rating of 200psi (235psi for sizes 14-36") minimum and provide no less than a safety factor of 2:1. Restraint shall be FM approved in applicable sizes. Restraining device shall be SIGMA ONE-LOK™ or approved equal.

Installation Instructions

Note: This product is not designed to be used on plain end fittings.

1. Clean fitting socket and pipe end. Lubricate gasket and pipe end with soapy water (or approved pipe lubricant meeting AWWA C111). Install ONE-LOK™ restrainer on the pipe with the lip extension facing the pipe end, followed by the gasket, tapered side toward end of pipe. Insert pipe into fitting outlet and seat the gasket firmly and evenly into the gasket cavity. Maintain a straight joint during assembly.

NOTE: SIGMASEAL Gasket is recommended for ONE-LOK 30-48". When installing SIGMASEAL gasket, the tapered edges of the gasket must face away from the
pipe wall.

2. Push the ONE-LOK gland toward the fitting and center it around the pipe with the lip evenly against the gasket. Insert the T-bolts and hand-tighten the nuts. If deflection is required, make up after joint assembly but before tightening T-bolts.

3. Tighten T-bolts in an alternating manner maintaining an even gap between the gland and the fitting face at all points around the socket. Repeat until all the T-bolts are within the recommended torque value of AWWA C111/C600.

4. For installation on IPS O.D. PVC Pipe, twist, break, and remove the ABS spacers from the actuating bolts. DO NOT REMOVE SPACERS when installing product on C900 PVC. Hand tighten all actuating bolt until complete contact of all wedge segments is made with the pipe.

5. Tighten each actuating in a clockwise direction, alternating between the bolts in a star pattern until all the break-off tops have been removed. Never tighten an actuating bolt more than 180 degrees before moving to the next bolt.